

10-16-00

A

**UTILITY PATENT APPLICATION TRANSMITTAL
(Large Entity)***(Only for new nonprovisional applications under 37 CFR 1.53(b))*Docket No.
0112300/483Total Pages in this Submission
83**TO THE ASSISTANT COMMISSIONER FOR PATENTS**Box Patent Application
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

GAMING DEVICE HAVING ODDS OF WINNING WHICH INCREASE AS A PLAYER'S WAGER INCREASES

and invented by:

Anthony J. BaerlocherIf a **CONTINUATION APPLICATION**, check appropriate box and supply the requisite information:☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Enclosed are:

Application Elements

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 59 pages and including the following:
 - a. ☒ Descriptive Title of the Invention
 - b. ☐ Cross References to Related Applications *(if applicable)*
 - c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*
 - d. ☐ Reference to Microfiche Appendix *(if applicable)*
 - e. ☒ Background of the Invention
 - f. ☒ Brief Summary of the Invention
 - g. ☒ Brief Description of the Drawings *(if drawings filed)*
 - h. ☒ Detailed Description
 - i. ☒ Claim(s) as Classified Below
 - j. ☒ Abstract of the Disclosure

UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.
0112300/483

Total Pages in this Submission
86

Application Elements (Continued)

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☐ Formal Number of Sheets _____
- b. ☒ Informal Number of Sheets 16
4. ☒ Oath or Declaration
- a. ☐ Newly executed (original or copy) ☒ Unexecuted
- b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☒ With Power of Attorney ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application,
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference (usable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Computer Program in Microfiche (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all must be included)
- a. ☐ Paper Copy
- b. ☐ Computer Readable Copy (identical to computer copy)
- c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

8. ☐ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(B) Statement (when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement/PTO-1449 ☐ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☒ Certificate of Mailing
- ☐ First Class ☒ Express Mail (Specify Label No.): EL387672734US

UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.
0112300/483

Total Pages in this Submission
83

Accompanying Application Parts (Continued)

15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)

16. ☐ Additional Enclosures (please identify below):

Request That Application Not Be Published Pursuant To 35 U.S.C. 122(b)(2)

17. ☐ Pursuant to 35 U.S.C. 122(b)(2), Applicant hereby requests that this patent application not be published pursuant to 35 U.S.C. 122(b)(1). Applicant hereby certifies that the invention disclosed in this application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication of applications 18 months after filing of the application.

Warning

An applicant who makes a request not to publish, but who subsequently files in a foreign country or under a multilateral international agreement specified in 35 U.S.C. 122(b)(2)(B)(i), must notify the Director of such filing not later than 45 days after the date of the filing of such foreign or international application. A failure of the applicant to provide such notice within the prescribed period shall result in the application being regarded as abandoned, unless it is shown to the satisfaction of the Director that the delay in submitting the notice was unintentional.

UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.
0112300/483

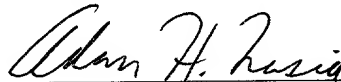
Total Pages in this Submission
83

Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	34	- 20 =	14	x \$18.00	\$252.00
Indep. Claims	6	- 3 =	3	x \$80.00	\$240.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$710.00
OTHER FEE (specify purpose) _____					
TOTAL FILING FEE					\$1,202.00

- ☒ A check in the amount of **\$1,202.00** to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. **02-1818** as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of _____ as filing fee.
- ☒ Credit any overpayment.
- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).


Signature

Adam H. Masia
Reg. No. 35,602

Dated: October 13, 2000

cc:

Variable	Mean	SD	Min	Max
Age	34.5	10.5	18	65
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	9	16
Income	1.5	0.5	1	2
Health status	1.5	0.5	1	2
Stress level	2.5	0.5	1	3
Life satisfaction	3.5	0.5	1	4
Work satisfaction	3.5	0.5	1	4
Family satisfaction	3.5	0.5	1	4
Community satisfaction	3.5	0.5	1	4
Overall satisfaction	3.5	0.5	1	4

Variable	Mean	SD	Min	Max
Age	34.5	10.5	18	65
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	9	16
Income	1.5	0.5	1	2
Health status	1.5	0.5	1	2
Stress level	2.5	0.5	1	3
Life satisfaction	3.5	0.5	1	4
Work satisfaction	3.5	0.5	1	4
Family satisfaction	3.5	0.5	1	4
Community satisfaction	3.5	0.5	1	4
Overall satisfaction	3.5	0.5	1	4

Variable	Mean	SD	Min	Max
Age	34.5	10.5	18	65
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	9	16
Income	1.5	0.5	1	2
Health status	1.5	0.5	1	2
Stress level	2.5	0.5	1	3
Life satisfaction	3.5	0.5	1	4
Work satisfaction	3.5	0.5	1	4
Family satisfaction	3.5	0.5	1	4
Community satisfaction	3.5	0.5	1	4
Overall satisfaction	3.5	0.5	1	4

Variable	Mean	SD	Min	Max
Age	34.5	10.5	18	65
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	9	16
Income	1.5	0.5	1	2
Health status	1.5	0.5	1	2
Stress level	2.5	0.5	1	3
Life satisfaction	3.5	0.5	1	4
Work satisfaction	3.5	0.5	1	4
Family satisfaction	3.5	0.5	1	4
Community satisfaction	3.5	0.5	1	4
Overall satisfaction	3.5	0.5	1	4

Variable	Mean	SD	Min	Max
Age	34.5	10.5	18	65
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	9	16
Income	1.5	0.5	1	2
Health status	1.5	0.5	1	2
Stress level	2.5	0.5	1	3
Life satisfaction	3.5	0.5	1	4
Work satisfaction	3.5	0.5	1	4
Family satisfaction	3.5	0.5	1	4
Community satisfaction	3.5	0.5	1	4
Overall satisfaction	3.5	0.5	1	4

Variable	Mean	SD	Min	Max
Age	34.5	10.5	18	65
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	9	16
Income	1.5	0.5	1	2
Health status	1.5	0.5	1	2
Stress level	2.5	0.5	1	3
Life satisfaction	3.5	0.5	1	4
Work satisfaction	3.5	0.5	1	4
Family satisfaction	3.5	0.5	1	4
Community satisfaction	3.5	0.5	1	4
Overall satisfaction	3.5	0.5	1	4

GAMING DEVICE HAVING ODDS OF WINNING WHICH INCREASE AS A PLAYER'S WAGER INCREASES

5

COPYRIGHT NOTICE

A portion of the disclosure of this patent document contains or may contain material which is subject to copyright protection. The copyright owner has no objection to the photocopy reproduction by anyone of the patent document or the patent disclosure in exactly the form it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever.

10

DESCRIPTION

The present invention relates in general to a gaming device, and more particularly to a gaming device having an award including a jackpot award, wherein the average investment required to win the award is the same regardless of the amount of a player's bet.

15

BACKGROUND OF THE INVENTION

It is well known to provide gaming devices having a certain average percentage payback to the player. Slot gaming machines typically predetermine the payback percentage to be around 90%, or 90 cents on

COPIED FROM

the dollar. When slot gaming machines include progressive jackpots, the payback percentage of the machine can increase towards 100%.

Progressive slot machines contain jackpots that increase every time a player plays the slot machine. A linked progressive includes two or
5 more slot machines connected to a common jackpot, each of which individually contribute to the jackpot. An individual progressive slot machine has a self contained jackpot, wherein the jackpot grows with every play. The machines usually take a percentage of the player's bet such as 10%, and add it to the jackpot. The jackpots can reach sizeable
10 amounts, e.g., \$1 million, before a player "hits" or wins the jackpot. Such sizeable jackpots become very attractive to players. Furthermore, as the jackpot grows, so does overall payout percentage of the game.

Regardless of the type of progressive, known games typically require the player to play the maximum bet to be eligible to win the
15 progressive jackpot. Even on a single payline dollar machine, the maximum bet can be \$5 (max bet on most slot machines is 5 credits per payline). Many players who are not willing to wager such an amount, or consistently willing to wager such an such an amount, are thus excluded from having an opportunity to win the progressive jackpot and enjoy its
20 associated payout increase. A known progressive slot machines that requires a max bet to enable the player to win a jackpot includes a "Megabucks" game by IGT, the assignee of this invention.

Other known multi-payline slot machines enable the player to win a predetermined, i.e., fixed, jackpot when the player plays or activates all the paylines of the gaming device. A payline is a series of adjacent or juxtaposed symbols that the game analyzes to determine if the player has won or lost a game of the slot machine. On a machine displaying five reels and three symbols per reel, it is not uncommon for the machine to have five, nine or fifteen different paylines. The machines commonly enable a player to wager up to \$5 on one or more paylines. The machines usually require the player to bet the lines sequentially, i.e., one, two, three as opposed to one, three, eight, and most machines require the same bet to be placed on each line. On a \$1 machine, the player may again have to wager at least \$5 to play each of the five lines to be eligible for a jackpot. Many players are again unwilling and thus excluded from having an opportunity to win a multi-payline jackpot and enjoy its associated payout increase. A known slot machine that requires a player to bet all paylines to enable the player to win a progressive jackpot includes a "Jackpot Bingo" game by Casino Data Systems. "Jackpot Bingo" also offers different jackpots if the player bets a second dollar on each line and plays the maximum number of lines. This game therefore offers two different jackpots: one for a \$1 bet per line and a larger one for a \$2 bet per line.

Other slot machines require the player to wager the max bet, i.e., the highest possible number of credits on each of the paylines, or max

lines, i.e., at least on coin per payline before the game enables the player to win a predetermined award from a game of the gaming device. A known slot machine that requires a player to wager a max bet to enable the player to win an award includes a "Video Wheel of Fortune" game by IGT. In each of these situations, it is desirable to provide a gaming device having a game that enables any player to be eligible to win the award and enjoy its associated payout increase, regardless of the amount wagered.

Another drawback to known jackpots including progressive jackpots is that once enabled, if the player's bet exceeds the threshold level necessary to enable the jackpot, the known games do not reward the player for exceeding the threshold. These types of games provide the same jackpot award with the same odds of winning the jackpot regardless of whether the player plays 1 or 5 credits per payline. This creates a disincentive to bet more coins since the payback percentage decreases as the player's wager increases. For example, a "Tropical Link" game by Aristocrat Technologies, Inc. activates a jackpot award when any of the paylines are played but does not reward the player for wagering multiple coins or credits on a payline.

There exists at least one known slot machine that increases the player's odds of winning a jackpot based upon the number of coins or credits played. Another Aristocrat game called "Hyperlink" maintains a system separate and apart from the normal operation of the game of the

For example, in the Aristocrat system, if the player bets one coin, the Aristocrat system can maintain a 1/10,000 chance of making the player eligible to play for the jackpot, whereby if the player bets forty-five coins, the Aristocrat system would then maintain a 45/10,000 chance of making the player eligible for the jackpot. This machine, however, does not employ a game that the player sees and/or plays that sets forth, employs or carries out the determination using the odds dictated by the amount of the player's wager.

SUMMARY OF THE INVENTION

The present invention provides a gaming device and preferably a bonus round of a gaming device, wherein the game requires the same average investment from a player to win an award or jackpot from the gaming device, regardless of the amount that the player bets at any one

time. The award or jackpot can be unchanging, e.g., \$10,000, each time a player plays the gaming device. The jackpot can also be progressive, i.e., the jackpot builds until a player "hits" the jackpot, after which the progressive jackpot starts from a predetermined minimum and builds again.

The game enables the average investment necessary to win the jackpot to be uniform by varying the odds of winning the jackpot as the amount of the player's bet varies. That is, a player betting less money needs to play the game more times, on average, to win the jackpot. Likewise, a player betting more money needs to play the game less times, on average, to win the jackpot. The average overall bet or investment thus remains constant despite the player's betting habits or betting ability. The game enables the player playing the smallest possible gaming device wager to have a chance at winning the jackpot. At the same time, the game does not punish the higher stakes player; but rather, increases the likelihood of winning or provides more favorable odds as the player increases the total bet or wager or an individual component of the wager such as each bet on a payline.

It should be appreciated that although the average investment necessary to win the jackpot does not vary, the jackpot itself does not have to remain constant, such as in the progressive game described above. The return on investment, which is a function of the jackpot

The present invention applies to any type of gaming device, wherein a player bets or wagers an amount of money (in whole or in components), and the game pays back a certain average percentage of money to the player. The present invention more particularly applies to a slot machine gaming device, which usually has three to five symbol generating reels, displays three symbols per reel and maintains one to fifteen different paylines (each bet on a payline being a component of the total wager).

When the gaming device of the present invention is a slot machine, there exists two well known and standard components to the player's total bet or wager; namely, (i) the number of paylines or components that a player has bet and (ii) the player's bet per active payline or component.

20 Increasing the likelihood that a player will win at a slot machine as the player increases the total bet via increasing the number of paylines, when the winning symbols or combinations remain constant, is well known and

is, in fact, one of the purposes of employing multiple paylines. The present invention, however, contemplates changing the winning symbols or combinations and thereby providing more favorable odds when the player plays more paylines. The present invention also contemplates

5 increasing the likelihood that a player will win at a slot machine as the player increases the total bet via increasing the bet per active payline. The present invention further contemplates increasing the likelihood that a player will win at a slot machine as the player increases the total bet via increasing the paylines and the bet per active payline. For purposes of

10 this application payline and component or wager component are referred to herein interchangeably, although it should be application that a wager component includes but is not to a payline.

In the present invention, the number of paylines bet and the bet per active payline are player inputs that the gaming device has no control

15 over, but which form an overall bet and dictate to the gaming device the odds of the player winning a jackpot prize. The gaming device must in turn have one or more methods to vary the odds based upon the overall bet. The present invention contemplates a plurality of different methods for varying the odds based upon the overall bet. The present invention

20 can employ one or more methods for varying the odds based upon the number of paylines bet. The present invention can employ one or more

methods for varying the odds based upon the bet per active payline. The present invention can also employ a combination of these methods.

In one embodiment, the game controls the odds created by a player selecting a number of paylines by enabling a player betting more paylines to have better odds at reaching a bonus round or jackpot game, wherein the bonus round or jackpot game enables the player to play for the jackpot prize. The player's odds are better because the player can win a jackpot on any wagered payline. In another embodiment, the game controls the odds created by a player selecting a bet per payline by enabling a player betting a higher number of credits per payline to have more chances in the jackpot game and thus better odds at winning the jackpot game. It should be appreciated that the present invention can then combine these two methods, so both the paylines and bet per activated payline affect the odds for the player.

It should be appreciated that the present invention includes increasing the odds of a win as the player increases the wager by other suitable means, such as increasing the number of reel spins related to the wager as the wager increases. By increasing the spins or chances, the chance of winning increases.

The game also contemplates a plurality of player interactive events for each method contemplated by the present invention. One player interactive event contemplated by the present invention for controlling the

15 It is therefore an object of the present invention to provide a gaming device with an award, wherein the player's odds of winning the award via a player interactive event increase as the player's wager increases.

Another object of the present invention is to provide a gaming device with a jackpot award provided as an outcome of a player interactive event, wherein the player's return on investment is independent of the amount of the player's wager.

Yet another object of the present invention is to provide a slot machine gaming device with an award, wherein the odds of winning said award via a player interactive event increase as a player's number of active paylines and bet per payline increases.

Other objects, features and advantages of the invention will be apparent from the following detailed disclosure, taken in conjunction with the accompanying sheets of drawings, wherein like numerals refer to like parts, elements, components, steps and processes.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1A is a front-right side perspective view of one embodiment of
15 the gaming device of the present invention;

Fig. 1B is a front-right side perspective view of another embodiment of the gaming device of the present invention;

Fig. 2 is a schematic block diagram of the electronic configuration of one embodiment of the gaming device of the present invention;

20 Fig. 3 is a graph illustrating a curve of the odds as a function of the
amount wagered for the present invention;

Fig. 4 is a graph illustrating a plot of the payout ratio as a function of the amount wagered for the present invention;

Fig. 5 is a graph illustrating the odds as a function of a player's bet for the normal operation (i.e., non-jackpot award) of known slot machines;

5 Fig. 6 is a graph illustrating a plot of the payout ratio as a function of the amount wagered in the normal operation (i.e., non-jackpot award) of known slot machines;

Fig. 7 is a graph illustrating the odds of winning a jackpot award, including a progressive jackpot, as a function of a player's bet for known slot machines having a max bet requirement;

Fig. 8 is a graph of the prior art illustrating the payout ratio along the y-axis and an amount wagered along the x-axis of the graph, wherein the payout ratio is zero until the player wagers the max bet;

Fig. 9 is a graph illustrating the odds of winning a jackpot award, including a progressive jackpot, as a function of a player's bet for known slot machines having a bet all paylines requirement;

Fig. 10 is a graph of the prior art illustrating a decreasing payout ratio along the y-axis and an amount wagered along the x-axis, wherein the payout ratio decreases as the wager increases;

20 Fig. 11 is a schematic chart illustrating a plurality of possible games of the present invention, wherein each has a separate odds varying method involving one or more of the wager components (number of

paylines and/or bet per payline), and one or more of gaming device components (base game and/or bonus game);

Fig. 12 is a front plan view of a portion of gaming device 10 which includes the apparatus necessary to carry out the method of Game 1 of Fig. 11, wherein the present invention varies the odds as a function of the bet per payline in the base game;

Fig. 13 is a front plan view of a portion of gaming device 10 which includes the apparatus necessary to carry out the method of Game 2 of Fig. 11, wherein the present invention varies the odds as a function of changing the number of paylines wagered and the odds as a function of changing the bet per payline in the base game;

Fig. 14 is a front plan view of a portion of gaming device 10 which includes the apparatus necessary to carry out the method of Game 3 of Fig. 11, wherein the present invention varies the odds as a function of changing the number of paylines wagered in the base game and the odds as a function of changing the bet per payline in the bonus round;

Fig. 15 is a front plan view of a portion of gaming device 10 which includes the apparatus necessary to carry out the method of Game 4 of Fig. 11, wherein the present invention varies the odds as a function of changing the bet per payline in the base game and the odds as a function of changing the number of paylines wagered in the bonus round;

Fig. 16 is a front plan view of a portion of gaming device 10 which includes the apparatus necessary to carry out the method of Game 5 of Fig. 11, wherein the present invention varies the odds in the base game and the bonus round and provides an additional odds constant in the bonus round;

Fig. 17 is a front plan view of a portion of gaming device 10 which includes a preferred embodiment of the present invention; and

Fig. 18 is a front plan view of a portion of gaming device 10 which includes the apparatus necessary to carry out the method of Game 6 of Fig. 11, wherein the present invention provides an odds constant in the base game and varies the odds in the bonus round.

DETAILED DESCRIPTION OF THE INVENTION

Gaming Device and Electronics

Referring now to the drawings, two embodiments of the gaming device of the present invention are illustrated in Figs. 1A and 1B as gaming device 10a and gaming device 10b, respectively. Gaming device 10a and/or gaming device 10b are generally referred to herein as gaming device 10. Gaming device 10 is preferably a slot machine having the controls, displays and features of a conventional slot machine. It is constructed so that a player can operate it while standing or sitting, and gaming device 10 is preferably mounted on a console. However, it should

5 1A and 1B. Gaming device 10 can also be implemented as a program code stored in a detachable cartridge for operating a hand-held video game device. Also, gaming device 10 can be implemented as a program code stored on a disk or other memory device which a player can use in a desktop or laptop personal computer or other computerized platform.

10 Gaming device 10 can incorporate any primary game such as slot, poker or keno, any of their bonus triggering events and any of their bonus round games. The symbols and indicia used on and in gaming device 10 may be in mechanical, electrical or video form.

As illustrated in Figs. 1A and 1B, gaming device 10 includes a coin slot 12 and bill acceptor 14 where the player inserts money, coins or tokens. The player can place coins in the coin slot 12 or paper money or a ticket voucher in the bill acceptor 14. Other devices could be used for accepting payment such as readers or validators for credit cards or debit cards. When a player inserts money in gaming device 10, a number of credits corresponding to the amount deposited is shown in a credit display 16. After depositing the appropriate amount of money, a player can begin the game by pulling arm 18 or pushing play button 20. Play button 20 can

be any play activator used by the player which starts any game or sequence of events in the gaming device.

As shown in Figs. 1A and 1B, gaming device 10 also includes a bet display 22 and a bet one button 24. The player places a bet by pushing the bet one button 24. The player can increase the bet by one credit each time the player pushes the bet one button 24. When the player pushes the bet one button 24, the number of credits shown in the credit display 16 decreases by one, and the number of credits shown in the bet display 22 increases by one.

At any time during the game, a player may “cash out” and thereby receive a number of coins corresponding to the number of remaining credits by pushing a cash out button 26. When the player “cashes out,” the player receives the coins in a coin payout tray 28. The gaming device 10 may employ other payout mechanisms such as credit vouchers redeemable by a cashier or electronically recordable cards which keep track of the player’s credits.

Gaming device 10 also includes one or more display devices. The embodiment shown in Fig. 1A includes a central display device 30, and the alternative embodiment shown in Fig. 1B includes a central display device 30 as well as an upper display device 32. Gaming device 10 preferably displays a plurality of reels 34, preferably three to five reels 34 in mechanical or video form at one or more of the display devices.

Each reel 34 displays a plurality of indicia such as bells, hearts, fruits, numbers, letters, bars or other images which preferably correspond to a theme associated with the gaming device 10. Furthermore, gaming device 10 preferably includes speakers 36 for making sounds or playing music.

As illustrated in Fig. 2, the general electronic configuration of gaming device 10 preferably includes: a processor 38; a memory device 40 for storing program code or other data; a central display device 30; an upper display device 32; a sound card 42; a plurality of speakers 36; and one or more input devices 44. The processor 38 is preferably a microprocessor or microcontroller-based platform which is capable of displaying images, symbols and other indicia such as images of people, characters, places, things and faces of cards. The memory device 40 can include random access memory (RAM) 46 for storing event data or other data generated or used during a particular game. The memory device 40

can also include read only memory (ROM) 48 for storing program code which controls the gaming device 10 so that it plays a particular game in accordance with applicable game rules and pay tables.

As illustrated in Fig. 2, the player preferably uses the input devices 5 44, such as pull arm 18, play button 20, the bet one button 24 and the cash out button 26 to input signals into gaming device 10. In certain instances it is preferable to use a touch screen 50 and an associated touch screen controller 52 instead of a conventional video monitor display device. Touch screen 50 and touch screen controller 52 are connected to 10 a video controller 54 and processor 38. A player can make decisions and input signals into the gaming device 10 by touching touch screen 50 at the appropriate places. As further illustrated in Fig. 2, the processor 38 can be connected to coin slot 12 or bill acceptor 14. The processor 38 can be programmed to require a player to deposit a certain amount of money in 15 order to start the game.

It should be appreciated that although a processor 38 and memory device 40 are preferable implementations of the present invention, the present invention can also be implemented using one or more application-specific integrated circuits (ASIC's) or other hard-wired devices, or using 20 mechanical devices (collectively referred to herein as a "processor"). Furthermore, although the processor 38 and memory device 40 preferably reside on each gaming device 10 unit, it is possible to provide some or all

of their functions at a central location such as a network server for communication to a playing station such as over a local area network (LAN), wide area network (WAN), Internet connection, microwave link, and the like. The processor 38 and memory device 40 is generally referred to
5 herein as the "computer" or "controller."

With reference to Figs. 1A, 1B and 2, to operate the gaming device
10 in one embodiment the player must insert the appropriate amount of money or tokens at coin slot 12 or bill acceptor 14 and then pull the arm 18 or push the play button 20. The reels 34 will then begin to spin. Eventually, the reels 34 will come to a stop. As long as the player has
10 credits remaining, the player can spin the reels 34 again. Depending upon where the reels 34 stop, the player may or may not win additional credits.

In addition to winning credits in this manner, preferably gaming device 10 also gives players the opportunity to win credits in a bonus
15 round. This type of gaming device 10 will include a program which will automatically begin a bonus round when the player has achieved a qualifying condition in the game. This qualifying condition can be a particular arrangement of indicia on a display device. The gaming device
10 preferably uses a video-based central display device 30 to enable the
20 player to play the bonus round. Preferably, the qualifying condition is a predetermined combination of indicia appearing on a plurality of reels 34. As illustrated in the five reel slot game shown in Figs. 1A and 1B, the

qualifying condition could be the number seven appearing on three adjacent reels 34 along a payline 56. It should be appreciated that the present invention can include one or more paylines, such as payline 56, wherein the paylines can be horizontal, diagonal or any combination thereof.

Examples of The Present Invention

To best understand the present invention, it is easiest to illustrate different examples, wherein certain examples illustrate known gaming devices and certain examples illustrate the gaming device of the present invention. A first set of examples includes the following parameters: (i) a wager x , which can vary but which will be illustrated within the range of \$1 to \$45; (ii) a jackpot award y , which is equal to \$10,000; (iii) a payout ratio z , which is a constant for the present invention and which undesirably varies in known gaming machines.

The present invention applies the following mathematical formula in determining the player's odds as a function of the player's wager:

$$\text{odds} = y / (x * z).$$

Assuming that on average, \$100,000 is wagered for every jackpot it pays out, z , which is constant in the present invention, equals \$10,000 (the jackpot) / \$100,000 (the take) = .1. Plugging .1 into the payout ratio z of

the above equation and inputting different values for the player's wager x yields the following odds:

If player wagers \$1, the odds of winning the jackpot are 100,000:1;

If player wagers \$2, the odds of winning the jackpot are 50,000:1;

5 If player wagers \$3, the odds of winning the jackpot are 33,333:1;

If player wagers \$4, the odds of winning the jackpot are 25,000:1;

If player wagers \$5, the odds of winning the jackpot are 20,000:1;

If player wagers \$6, the odds of winning the jackpot are 16,666:1;

If player wagers \$7, the odds of winning the jackpot are 14,285:1;

10 If player wagers \$8, the odds of winning the jackpot are 12,500:1;

If player wagers \$9, the odds of winning the jackpot are 11,111:1; and

If player wagers \$10, the odds of winning the jackpot are 10,000:1.

Referring now to Fig. 3, a graph illustrates a curve of the odds as a function of a player's bet for the present invention. The graph includes the odds of winning the jackpot 100 along the y-axis of the graph and the amount wagered or player's bet 102 along the x-axis of the graph. The graph also includes the odds equation 104 described above and a definition of its constituents x , y , and z . The graph illustrates that the player's bet 102 affects the player's odds of winning the jackpot 100.

20 Betting \$2 instead of \$1 doubles the likelihood of winning the jackpot.

Betting \$5 instead of \$1 makes the player five times as likely to win the

jackpot, and so on. Every change in wager results in a change of odds. Every increase in wager results in more favorable odds for the player.

Referring now to Fig. 4, a graph illustrates a plot of the payout ratio as a function of the amount wagered or player's bet for the present invention. The graph includes the payout ratio, z , 106 along the y-axis and amount wagered 102 along the x-axis. The graph also includes a payout ratio equation 108 including the constituents x , y , and odds. The straight horizontal line indicates that the payout ratio z of the present invention is constant regardless of the amount wagered. The game pays the same percentage regardless of how much the player wagers. The present invention thus enables any type of player, low stakes or high stakes, to have an opportunity to win the jackpot y . Players willing to wager large amounts, however, will enjoy more favorable odds of winning the jackpot.

Referring to both Figs. 3 and 4, it should be appreciated that the odds curve of Fig. 3 and the payout ratio line of Fig. 4 for the present invention do not require the jackpot y to have any particular value. In the example the jackpot is \$10,000, however, the jackpot can have any value, e.g., \$10, \$100, \$1,000, \$100,000, \$1,000,000, etc. The jackpot y can also vary over time or as a function of a gaming device event, i.e., from game to game. For example, on one spin of the reels 34 (Figs. 1A and 1B), the jackpot can be \$5,000 and on the next one the jackpot can be

\$15,000, etc. The graphs of Figs. 3 and 4 apply to one spin of the reels or one turn at the gaming device. Within one spin or turn, the odds at winning a particular jackpot are better the more a player wagers, but the payout ratio for that particular jackpot is the same despite the amount
 5 wagered. The present invention thus includes progressive games described above. Even if a particular progressive jackpot increases while the reels of a slot machine are spinning, the present invention still applies to whatever value is ultimately available for the player to win.

To aid in the description of the present invention, it is helpful to
 10 illustrate the relationship, or lack thereof between the odds, the wager x , the award or jackpot y and the payout ratio z for other known gaming devices. Referring now to Fig. 5, a graph illustrates the odds as a function of a player's bet for the normal operation (i.e., non-jackpot award) of known slot machines. The graph includes the odds of winning an award
 15 110 along the y-axis of the graph and the amount wagered or player's bet 102 along the x-axis of the graph. Known gaming devices maintain predefined odds for each paying symbol or combination of symbols. The player can obtain more favorable odds by playing more paylines at one time, which increases the player's wager.

20 If, for example, on a machine with a minimum wager of \$1 per payline, the odds are 1000:1 that a player will obtain three "7" symbols, wherein any "7", "7", "7", in a row pays \$100, a player will on average pay

that one wager amount can have more than one odds value. For instance, depending upon how the player dispersed a \$12 wager, the player's odds of winning can be 333:1, 250:1 or 166:1. In the normal operation of known slot machines, therefore, an increase in a wager does not necessarily translate into more favorable odds for the player. In fact, a player betting \$9, \$1 on nine paylines, has better odds of winning, 111:1, than does a player betting \$35, \$5 on seven paylines, who has 142:1 odds of winning. However, it should be appreciated that in certain games, there is a larger potential payout, i.e., a jackpot, for winning when the player makes the maximum wager.

Referring now to Fig. 6, a graph illustrates a plot of the payout ratio as a function of the amount wagered or player's bet in the normal operation of slot machines. The graph includes the payout ratio z along the y-axis and amount wagered along the x-axis of the graph. The graph also includes a payout ratio equation including the constituents x , y , and odds. The straight horizontal line indicates that the payout ratio z of the normal operation of slot machines is constant regardless of the amount wagered, i.e., regardless of the number of lines played or the amount wagered per line. For example, if the player wagers \$1 on one payline in the above example, the payout ratio z is:

$$z = y / (x * \text{odds}) = \$100 / (\$1 * 1000) = .1$$

If the player wagers \$5 on nine paylines and therefore wins 5X the payout of any win in the above example, the payout ratio z is:

$$z = y / (x * \text{odds}) = (5 * \$100) / (\$45 * 111) = .1$$

Referring now to Fig. 7, a graph illustrates the odds of winning a jackpot award, including a progressive jackpot, as a function of a player's bet for known slot machines having a max bet requirement. Assume a jackpot of \$4,500 at predetermined odds of 1,000:1 exists on a slot machine with a minimum wager of \$1 per payline, a maximum wager of \$5 per payline and nine paylines. The graph includes the odds of winning the jackpot 100 along the y-axis of the graph and the amount wagered or player's bet 102 along the x-axis of the graph. The graph illustrates that in many known games, there are no odds of winning a jackpot award until the player wagers a max bet, illustrated here as \$5 times nine paylines or \$45. It should be appreciated that increasing the bet has no affect on the odds of winning the jackpot until the player wagers the max bet. Referring now to Fig. 8, a similar looking graph illustrates the payout ratio 106 along the y-axis and an amount wagered 102 along the x-axis of the graph, wherein the payout ratio is zero until the player wagers the max bet, at which point $z = y / (x * \text{odds}) = \$4,500 / (\$45 * 1,000) = .1$.

Referring now to Fig. 9, a graph illustrates the odds of winning a jackpot award, including a progressive jackpot, as a function of a player's bet for known slot machines having a bet all paylines requirement.

Assume the same jackpot of \$4,500 at predetermined odds of 1,000:1 exists on a slot machine with a minimum wager of \$1 per payline, a maximum wager of \$5 per payline and nine paylines. The graph includes the odds of winning the jackpot 100 along the y-axis of the graph and the amount wagered or player's bet 102 along the x-axis of the graph. The graph illustrates that in known games, there are no odds of winning a jackpot award until the player plays all nine paylines, illustrated here by the wagers of \$9, \$18, \$27, 36\$ and \$45. It should be appreciated that increasing the wager has no affect on the odds of winning the jackpot until the player wagers an amount divisible by nine, the number of paylines. Referring now to Fig. 10, a graph illustrates a decreasing payout ratio 106 along the y-axis and an amount wagered 102 along the x-axis of the graph, wherein the payout ratio, z , decreases as the wager, x , increases and the jackpot, y , and odds remain constant in the equation $z = y / (x * \text{odds})$.

Mechanisms and Methods of Varying Odds Based Upon a Player's Bet

The present invention contemplates a gaming device and specifically a slot machine adapted so that any wager enables the player to win any award including a jackpot award and a progressive jackpot award. The present invention further contemplates a gaming device and specifically a slot machine adapted so that an increase in a gaming device

wager produces more favorable odds for the player. Given these design parameters, those skilled in the art of gaming device design and manufacturing can develop many different methods and mechanisms embodying the methods to achieve the parameters. As disclosed above, 5 the two components of the vast majority of slot machine wagers include the number of paylines bet and the bet per payline. As disclosed earlier in the specification, many modern slot machines include bonus games in addition to the primary base game, wherein the base game includes the symbol generation via spinning reels. Bonus games can have multiple 10 levels of random generation, so that the odds of achieving an award can be split among two or more levels.

Referring now to Fig. 11, a schematic chart illustrates a plurality of possible games each having a separate method of involving one or more of the wager components with at least one of the base game 112, first 15 bonus level 114 or second bonus level 116. The change of odds or ODDS are expressed either as a function of a change in the number of paylines wagered or $f(\Delta \text{ \#paylines})$, as a function of a change in the bet per payline or $f(\Delta \text{ \$/payline})$ or for a single payline machine as a function of a change in the bet or $f(\Delta \text{ bet})$. These methods are described in detail 20 below by one possible implementation of the method. It should be appreciated that those skilled in the art can develop many different

implementations for each of the methods. The present invention is not therefore limited to the implementations disclosed.

Game 1

5 Referring now to Fig. 12, a front plan view of a portion of gaming device 10 including the apparatus necessary to carry out the method of Game 1 of Fig. 11 is illustrated. In the method disclosed in Fig. 11 for Game 1, the change in odds depends only a change in the wager amount. In Fig. 12, gaming device 10 includes a single payline machine having no
10 bonus round, a \$1 minimum bet and an award of \$10,000 having a payout ratio z of .1. Fig. 12 includes a paytable 118 illustrating that to win the \$10,000 award, betting: 1 coin (\$1) requires a "A", "A", "A", "A", "A" combination, 2 coins (\$2) requires a "A", "A", "A", "A", "B" combination; 3 coins (\$3) requires a "A", "A", "A", "C", "A" combination, 4 coins (\$4) requires a "A", "A", "D", "A", "A" combination and 5 coins (\$5) requires a
15 "A", "E", "A", "A", "A" combination.

The central display device 30 includes five well known reels, wherein each reel 34a through 34e includes a 1/10 chance of the game generating an "A". Reel 34b includes a 1/2 chance of the game
20 generating an "E". Reel 34c includes a 2/5 chance of the game generating a "D". Reel 34d includes a 3/10 chance of the game

generating a "C". Reel 34e includes a 1/5 chance of the game generating a "B".

It should be appreciated by one skilled in the art that in the method and apparatus of Fig. 12, \$100,000 will have to be wagered, on average, to win the \$10,000 award regardless of the amount that the player bets. It should also be appreciated that the players odds of winning, according the equation, $\text{odds} = y / (x * z)$ become more favorable to the player as the player increases the player's wager. It should further be appreciated that one skilled in the art can implement a similar game to Game 1, wherein the game provides and the paytable displays different winning combinations having varying odds or chance at being randomly generated, and wherein the combinations and thus the odds change as a function of a change in the number of paylines wagered.

Game 2

Referring now to Fig. 13, a front plan view of a portion of gaming device 10 including the apparatus necessary to carry out the method of Game 2 of Fig. 11 is illustrated. In the method disclosed in Fig. 11 for Game 2, the change in odds depends on a change in the number of lines wagered and on the bet per line amount. In Fig. 13, gaming device 10 includes a three payline machine having no bonus round a \$1 minimum

bet and an award of \$10,000 having a payout ratio z of .1. Fig. 13 includes the same paytable 118 illustrated with Fig. 12.

The central display device 30 includes the same five reels 34a through 34e, having the same symbol positions, as the reels of Fig. 12.

5 Thus for one payline, the Game 2 is exactly the same as the embodiment of Game 1. In this embodiment, the central display device 30 displays three paylines 56a through 56c. The player can thus make the odds twice as favorable by playing two paylines and three times as favorable by playing three paylines. Accordingly, the player's wager increases two
10 times by playing two paylines and three times by playing three paylines.

It should be appreciated by one skilled in the art, that in Game 2, \$100,000 will need to be wagered, on average, to win the \$10,000 award regardless of the number of paylines wagered or the bet per payline. It should also be appreciated that the players odds of winning, according the
15 equation, $\text{odds} = y / (x * z)$ become more favorable to the player as the player increases the number of paylines wagered and/or the bet per payline.

Game 3

20 Referring now to Fig. 14, a front plan view of a portion of gaming device 10 including the apparatus necessary to carry out the method of Game 3 of Fig. 11 is illustrated. In the method disclosed in Fig. 11 for

Game 3, the change in odds depends on a change in the number of lines wagered and on the bet per line amount. The base game odds 112 factor in the number of lines wagered and the bonus game odds 114 factor in the bet per payline. In Fig. 14, gaming device 10 includes a five payline machine having a bonus round, a \$1 minimum bet and an award of \$10,000 having a payout ratio z of .1.

Fig. 14 includes a paytable 120 illustrating that an "A", "A", "A", "A" combination on any payline triggers the bonus round and that betting: 1 coin(\$1)/line gives the player one spin in the bonus round; 2 coins(\$2)/line gives the player two spins in the bonus round; 3 coins(\$3)/line gives the player three spins in the bonus round; 4 coins(\$4)/line gives the player four spins in the bonus round; and 5 coins(\$5)/line gives the player five spins in the bonus round. Spinning a shield symbol yields the \$10,000 award.

Fig. 14 includes an upper display device 32, which is a rotatable wheel having ten equally sized pie-shaped sections. One of the sections contains a shield symbol 122. A cursor 124 designates one of the rotatable sections at all times. A player thus has a 1/10 chance of the spinning wheel stopping so that the cursor 124 designates the section containing the shield symbol 122.

In the bonus round of Game 3, the player who bets \$1 per payline spins once and has a 1/10 chance of winning. The player who bets \$2 per

payline spins twice and has a $1/5$ chance of winning. The player who bets \$3 per payline spins three times and has a $3/10$ chance of winning. The player who bets \$4 per payline spins four times and has a $2/5$ chance of winning. The player who bets \$5 per payline spins five times and has a $1/2$ chance of winning.

The base game embodied by the central display device 30 includes five well known reels, wherein each reel 34a through 34e includes a $1/10$ chance of the game generating an "A". Game 3 requires an "A", "A", "A", "A" combination to trigger the bonus round. The central display device 30 displays five paylines 56a through 56e. The player can thus make the odds twice as favorable by playing two paylines, three times as favorable by playing three paylines, etc. Accordingly, the player's wager increases two times by playing two paylines, three times by playing three paylines, etc.

It should be appreciated that in Game 3, \$100,000 will need to be wagered, on average, to win the \$10,000 award regardless of the number of paylines wagered or the bet per payline. It should also be appreciated that the odds of winning, according the equation, $\text{odds} = y / (x * z)$ become more favorable as the player's wager increases. It should further be appreciated that the odds of entering the bonus round become more favorable to the player as the player increases the number of paylines

wagered and the odds of winning the bonus round become more favorable to the player as the player increases the bet per payline.

Game 4

5 Referring now to Fig. 15, a front plan view of a portion of gaming device 10 including the apparatus necessary to carry out the method of Game 4 of Fig. 11 is illustrated. In the method disclosed in Fig. 11 for Game 4, the change in odds depends on a change in the number of paylines wagered and on the bet per line amount. The base game odds 10 112 factor in the bet per payline and the bonus game odds 114 factor in the number of lines wagered. In Fig. 15, Game 4 includes a three payline machine having a bonus round, a \$1 minimum bet and an award of \$10,000 having a payout ratio z of .1.

Fig. 15 includes a payable 126 illustrating that to enter the bonus 15 round from the base game, betting: 1 coin (\$1) requires a "A", "A", "A", "A" combination along the bonus line, 2 coins (\$2) requires a "A", "A", "A", "B" combination along the bonus line; 3 coins (\$3) requires a "A", "A", "C", "A" combination along the bonus line, 4 coins (\$4) requires a "A", "D", "A", "A" combination along the bonus line; and 5 coins (\$5) requires a "E", "A", "A", 20 "A" combination along the bonus line 128. In the bonus, betting: one line gives the player one spin; two lines gives the player two spins; and three

lines gives the player three spins. Spinning a shield symbol yields the \$10,000 award.

The central display device 30, embodying the base game, includes four well known reels, wherein each reel 34a through 34d includes a 1/10
5 chance of the game generating an "A". Reel 34a includes a 1/2 chance of the game generating an "E". Reel 34b includes a 2/5 chance of the game generating a "D". Reel 34c includes a 3/10 chance of the game generating a "C". Reel 34d includes a 1/5 chance of the game generating a "B". In this embodiment, the central display device 30 displays three
10 paylines 56a through 56c. None of the paylines includes any of the symbols displayed in the top row of the central display device 30, which is the bonus line 128. Game 4 analyzes only the bonus line 128 to determine if the player enters the bonus round. That is, Game 4 does not analyze the paylines 56a through 56c to determine if the player enters the
15 bonus round.

Fig. 15 includes an upper display device 32, which is a rotatable wheel having ten equally sized pie-shaped sections. One of the sections contains a shield symbol 122. A cursor 124 designates one of the rotatable sections at all times. A player thus has a 1/10 chance of the
20 spinning wheel stopping so that the cursor 124 designates the section containing the shield symbol 122.

In the bonus round of Game 4, the player who plays one payline spins once and has a $1/10$ chance of winning. The player who plays two paylines spins twice and has a $1/5$ chance of winning. The player who plays three paylines spins three times and has a $3/10$ chance of winning.

5 The player can thus make the odds twice as favorable by playing two paylines and three times as favorable by playing three paylines. Accordingly, the player's wager increases two times by playing two paylines and three times by playing three paylines.

It should be appreciated that in Game 4, \$100,000 will need to be
10 wagered, on average, to win the \$10,000 award regardless of the number
of paylines wagered or the bet per payline. It should also be appreciated
that the players odds of winning, according the equation, $\text{odds} = y / (x$
 $* z)$ become more favorable to the player as the player increases the
player's wager. It should further be appreciated that the odds of entering
15 the bonus round become more favorable to the player as the player
increases the bet per payline and the odds of winning the bonus round
become more favorable to the player as the player increases the number
of paylines wagered.

20 Game 5

Referring now to Fig. 16, a front plan view of a portion of gaming device 10 including the apparatus necessary carry out the method of

Game 5 of Fig. 11 is illustrated. As mentioned earlier, the bonus round provides the implementor of the gaming device with an opportunity to split the odds necessary to complete the game math into two or more parts. In the method disclosed in Fig. 11 for Game 5, the change in odds depends
 5 on a change in the number of lines wagered and on the bet per line amount as disclosed above in connection with Fig. 14 or Game 3. The base game odds 112 factor in the number of paylines wagered and the second bonus level odds 116 factor in the bet per payline. The implementor also provides first bonus level odds 114 in the form of an
 10 odds constant 130.

In Fig. 16, gaming device 10 includes a five payline machine having a bonus round, a \$1 minimum bet and an award of \$10,000 having a payout ratio z of .1. Fig. 16 also includes a paytable 132 illustrating that an "A", "A", "A", "A" combination on any payline triggers the bonus round
 15 and that betting: 1 coin(\$1)/line gives the player one spin in the bonus round; 2 coins(\$2)/line gives the player two spins in the bonus round; 3 coins(\$3)/line gives the player three spins in the bonus round; 4 coins(\$4)/line gives the player four spins in the bonus round; and 5 coins(\$5)/line gives the player five spins in the bonus round. The player
 20 can also spin a multiplier wheel to double the player's bonus round spins. Spinning a shield symbol yields the \$10,000 award.

In the first level of the bonus round of Game 5, the player spins the rotatable wheel of the second upper display device 134 once regardless of the amount that the player has wagered per payline or the number of paylines wagered. The 1/2 chance of obtaining the “2X” symbol 136, which doubles the player’s number of spins, is thus constant, i.e., exists for every player entering the bonus round.

In the second level of the bonus round of Game 5, the player who bets \$1 per payline spins once 50% of the time and twice 50% of the time. It should be appreciated that the player thus has an overall 1/10 chance of winning. The player who bets \$2 per payline spins twice 50% of the time

The base game embodied by the central display device 30 includes five well known reels, wherein each reel 34a through 34e includes a 1/10 chance of the game generating an "A". Game 5 requires an "A", "A", "A", "A" combination to trigger the bonus round. The central display device 30 displays five paylines 56a through 56e. The player can thus make the odds twice as favorable by playing two paylines, three times as favorable by playing three paylines, etc. Accordingly, the player's wager increases two times by playing two paylines, three times by playing three paylines, etc.

20 It should be appreciated that in Game 5, \$100,000 will have to be
wagered, on average, to win the \$10,000 award regardless of the number
of paylines wagered or the bet per payline. It should also be appreciated

that the players odds of winning, according the equation, $\text{odds} = y / (x * z)$ become more favorable to the player as the player increases the player's wager. It should further be appreciated that the odds of entering the bonus round become more favorable to the player as the player increases the number of paylines wagered and the odds of winning the bonus round become more favorable to the player as the player increases the bet per payline.

The odds constant 130, which the implementor can infuse into the present invention, does not alter the fact that the player increases the chances of winning by wagering more money. Game 5 achieves the design parameters: (i) providing a gaming device adapted so that any wager enables the player to win any award including a jackpot award and a progressive jackpot award; and (ii) providing a gaming device adapted so that an increase in a gaming device wager produces more favorable odds for the player, despite the odds constant 130.

Referring to Fig. 11, Game 5 infuses the odds constant 130 into Game 3, whereby the change in odds as a function of the change in the bet per payline is shifted from the first bonus level odds 114 in Game 3 to the second bonus level odds 116 in Game 5. It should be appreciated that one skilled in the art of gaming device design can design a game, wherein the change in odds as a function of the change in the bet per payline remains in the first bonus level odds 114, e.g., occurs first, and wherein

the second bonus level odds 116 include the odds constant 130. It should also be appreciated that one skilled in the art can so infuse the odds constant 130 into other configurations and implementations of the present invention, such as Game 1, Game 2 and Game 4 discussed above. It should further be appreciated that one skilled in the art can implement a similar game to Game 5, wherein the wager per payline determines the base game odds and the number of wagered paylines affects the bonus level odds, e.g., the first bonus level odds 114, the second level odds 116 or both.

Referring now to Fig. 17, a front plan view of gaming device 10 including a preferred embodiment of the present invention is illustrated. Fig. 17 illustrates an example wherein the change in odds as a function of the change in the bet per payline occurs in the first and second bonus level odds 114 and 116, and wherein the first and second bonus level odds include odds constants 130. The example illustrates that the first and second bonus level odds 114 and 116 contain a plurality of odds constants 130 and that the bonus round contains a plurality of awards in addition to the \$10,000 grand prize or jackpot.

Paytable 152 discloses that three bonus symbols or shields in a row triggers a bonus round. As disclosed in connection with Game 3 and Game 5 of Fig. 11, the player increases the odds of entering the bonus round by playing or betting more paylines. Paytable 152 discloses that

The bonus games of the preferred embodiment are illustrated as simulations on the upper display device 32. It should be appreciated that either or both could be separate electro-mechanical displays. The spin grid game 154 contains fifteen selectable positions 154b through 154p. Each of these positions preferably associates with an award value or with a spin. The player begins at a start position 154a and can move right or down, i.e., to position 154b or 154e. The player will stop at five positions, moving right or down, until stopping at a sixth and final position 154p. It should be appreciated that a player, regardless of an amount bet, will always touch or land on six of the fifteen positions 154b through 154p. Thus an odds constant 130, inherent to the spin grid game 154 of 6/15 or 2/5 exists, regardless of an amount bet, by virtue of game design.

42

above with payable 152, the game assigns a number of spins to the positions, 154b through 154p based upon the player's bet per payline. The game preferably randomly assigns the spins to a position but could also predetermine the placement. If the player bets one coin, the game
5 only places one spin on the grid, which the player then can select.

The odds become more complicated when the player bets four or five coins per payline, wherein the grid then contains more spins than the player can possibly select. For example, if the player bets five coins, the game places nine spins on the grid 154, of which the player can randomly
10 pick or land on up to six. The overall odds are also effected if the implementor preferably predetermines that one spin is always assigned to the final position 154p because the player is guaranteed to land on the final position 154p. The game design also makes the odds of selecting 154b, 154e, 154l and 154o greater than the odds of selecting 154c, 154f,
15 154i and 154h, 154k and 154n, which are greater than the odds of selecting 154d, 154g, 154j and 154m. The overall odds of the spin grid game 154 are thus effected by a plurality of different odds constants 130 via the game design. Importantly, the number of spins placed on the grid, which the player controls via the player's wager, is always a factor of the
20 player's overall odds of obtaining spins in the spin grid 154. Thus, betting more coins per payline will always increase the player's odds assuming that all other circumstances are the same, i.e., the positioning of spins.

It should be appreciated that the number of spins also affects the overall odds of obtaining shields in the second bonus game or, in the second bonus level odds 116. In effect, the spinning wheel 156 of the second bonus level contains overall odds of winning the grand prize, which are a function of a plurality of odds constants 130 and the number of spins that the player obtains from the spin grid game 154. Likewise, the spin grid game 154 contains overall odds of the player obtaining a certain number of spins, which are a function of a plurality of odds constants 130 and the wagered coins per payline. The overall odds of winning the grand

It should be appreciated that the number of spins also affects the overall odds of obtaining shields in the second bonus game or, in the second bonus level odds 116. In effect, the spinning wheel 156 of the second bonus level contains overall odds of winning the grand prize, which are a function of a plurality of odds constants 130 and the number of spins that the player obtains from the spin grid game 154. Likewise, the spin grid game 154 contains overall odds of the player obtaining a certain number of spins, which are a function of a plurality of odds constants 130 and the wagered coins per payline. The overall odds of winning the grand

Game 6

Referring now to Fig. 18, a front plan view of a portion of gaming device 10 including the apparatus necessary to carry out the method of Game 6 of Fig. 11 is illustrated. In the method disclosed in Fig. 11 for Game 6, the base game odds 112 include the odds constant 130. Game 6 provides an example wherein the design parameters are achieved solely in the bonus round. That is, the first bonus level odds 114 include the change in odds as a function of a change in the number of paylines wagered, and the second bonus level odds 116 include the change in odds as a function of the bet per payline.

In Fig. 18, Game 6 includes a three payline machine having a bonus round, a \$1 minimum bet and an award of \$10,000 having a payout ratio z of .1. Fig. 18 also includes a paytable 140 illustrating that a “B” symbol on any payline triggers the bonus round and that two solid pie

shapes wins the \$10,000 award. Paytable 140 also illustrates that betting:
 1 payline gives the player one spin; 2 paylines gives the player two spins;
 and 3 paylines gives the player three spins on the payline wheel in the
 bonus round. Paytable 140 also illustrates that betting: 1 coin(\$1)/line
 5 gives the player one spin; 2 coins(\$2)/line gives the player two spins; and
 3 coins(\$3)/line gives the player three spins on the bet per line wheel in
 the bonus round.

The base game of Game 6 embodied by the central display device
 30 includes three well known reels 34a through 34c. Only the center reel
 10 34b includes the bonus triggering "B" symbol, wherein a player has a 1/40
 chance, the odds constant 130, of triggering the bonus round. The central
 display device 30 displays three paylines 56a through 56c. In the center
 reel 34b, each payline passes through the center paystop position 142. A
 bonus triggering "B" symbol landing on the center paystop position 142
 15 thus lands on all three paylines 56a through 56c at once. It should be
 appreciated that wagering on more paylines does not provide the player
 with more favorable odds of entering the bonus round of Game 6. The
 odds of triggering the bonus round are set or constant at 40:1 for each
 player regardless of the number of paylines wagered or the bet per
 20 payline.

The bonus round of Game 6 includes a rotatable payline wheel
 144, which is a wheel having fifty equally sized pie-shaped sections. One

of the sections 148 is darkened or bolded. A cursor 150 designates one of the rotatable sections at all times. A player thus has 50:1 odds, the first bonus level odds 114, of the spinning wheel stopping so that the cursor 150 designates the darkened pie section 148. The player can make the odds twice as favorable by playing two paylines and obtaining two spins or three times as favorable by playing three paylines and obtaining three spins. Accordingly, the player's wager increases two times by playing two paylines and three times by playing three paylines.

The bonus round of Game 6 also includes a rotatable bet per line wheel 146, which is also a wheel having fifty equally sized pie-shaped sections. One of the sections 148 is likewise darkened or bolded. A second cursor 150 designates one of the rotatable sections at all times. A player thus has 50:1 odds, the second bonus level odds 116, of the spinning wheel stopping so that the cursor 150 designates the darkened pie section 148. The player can make the odds twice as favorable by betting two coins per payline and obtaining two spins or three times as favorable by betting three coins per payline and obtaining three spins. Accordingly, the player's wager increases two times by betting two coins per payline and three times by betting three coins per payline.

The player wins the \$10,000 when both cursors 150 designate both darkened pie sections 148. It should be appreciated that in Game 6, \$100,000 will need to be wagered, on average, to win the \$10,000 award

48

10

49

CLAIMS

The invention is hereby claimed as follows:

- 5 1. A gaming device comprising:
- a controller, including means for determining an amount of a
player's wager including each component of said wager;
- a display device connected to said controller;
- a game adapted to be displayed to a player by said display device;
- 10 and
- said game having odds of said player winning an award maintained
by said controller, said odds changing whenever any component of said
wager changes.
- 15 2. The gaming device of Claim 1, wherein said odds of winning said
award increase as said amount of any component of said wager
increases.
3. The gaming device of Claim 1, wherein the game includes a
20 plurality of reels and at least one component is a payline, and wherein
said odds of winning said award increase when said player increases an
amount wagered on said payline.

8. The gaming device of Claim 6, wherein said game includes a number of attempts at randomly producing said award, said number of attempts being dependent upon the number of paylines wagered.

5 9. The gaming device of Claim 6, wherein said game includes a number of attempts at randomly producing said award, said number of attempts being dependent upon the number of paylines wagered and upon at least one odds constant.

10 10. The gaming device of Claim 6, wherein said game includes a number of attempts at randomly producing said award, said number of attempts being dependent upon the number of paylines wagered and the amount wagered per payline.

15 11. The gaming device of Claim 6, wherein said game includes a number of attempts at randomly producing said award, said number of attempts being dependent upon the number of paylines wagered, the amount wagered per payline, and upon at least one odds constant.

20 12. A slot machine comprising a jackpot award as an outcome of a player interactive event, wherein said machine enables a player wagering

the smallest machine allowable amount to have a chance to win said jackpot award.

13. The gaming device of Claim 1, which includes a payout percentage
5 for all wagers.

14. The gaming device of Claim 1, wherein a single payout percentage increases as the wager increases.

10 15. A slot machine comprising a jackpot award as an outcome of a player interactive event, wherein said machine enables a player wagering the smallest machine allowable amount to have the lowest probability of winning said jackpot award.

15 16. The slot machine of Claim 12, wherein said jackpot award is fixed.

17. The slot machine of Claim 12, wherein said jackpot award is progressive.

20 18. A slot machine comprising a plurality of reels and at least one payline, whereby a player can wager different amounts on said payline, and wherein the odds of winning a defined award as a result of a game of

said slot machine change when said player's wager changes where all wagers are eligible for the said award.

19. The slot machine of Claim 18, wherein said game includes a
5 number of attempts at randomly producing said award, said number of attempts being dependent upon the amount wagered per payline.

20. The slot machine of Claim 18, wherein said game includes a
10 number of attempts at randomly producing said award, said number of attempts being dependent upon the amount wagered per payline and upon at least one odds constant.

21. The slot machine of Claim 18, wherein said game includes a
15 production of a plurality of symbols on said reels, said award being dependent upon a production of a predetermined symbol or symbol combination on a payline, said symbol or combination being dependent upon the amount wagered per payline.

22. The slot machine of Claim 18, wherein said game includes a
20 production of a plurality of symbols on said reels, said award being dependent upon a production of a predetermined symbol or symbol

combination on a payline, said symbol or combination being dependent upon the number of wagered paylines.

23. The slot machine of Claim 18, wherein said game includes a bonus
5 round of said slot machine.

24. A slot machine comprising a plurality of reels and a payline,
whereby a player can wager different amounts on said payline, and
wherein the odds of winning a defined award as a result of a game of said
10 slot machine changes whenever said player's wager changes

25. A slot machine comprising a plurality of reels and a plurality of
paylines, whereby a player can wager different amounts on a number of
said paylines, and wherein the odds of winning an award as a result of a
15 game of said slot machine change whenever said player's wager changes.

26. The slot machine of Claim 25, wherein the odds of winning an
award as a result of said game change when said wager amount per
payline changes.

20

27. The slot machine of Claim 25, wherein the odds of winning an award as a result of said game change when said number of wagered paylines changes.

5 28. The slot machine of Claim 25, wherein the number of wagered paylines affects the odds of obtaining an award producing symbol or symbol combination, and wherein the wager amount per payline affects said symbol or symbol combination needed to generate said award.

10 29. The slot machine of Claim 25, which includes a bonus round of said slot machine in which said player can win said award, wherein the number of wagered paylines affects the odds of triggering said bonus round, and wherein the wager amount per payline affects the odds of winning said award once said bonus round has been triggered.

15

30. The slot machine of Claim 29, wherein at least one odds constant also affects the odds of winning said award once said bonus round has been triggered.

20 31. The slot machine of Claim 25, which includes a bonus round of said slot machine in which said player can win said award, wherein the wager amount per payline affects the odds of triggering said bonus round and

wherein the number of wagered paylines affects the odds of winning said award once said bonus round has been triggered.

32. The slot machine of Claim 31, wherein at least one odds constant
5 also affects the odds of winning said award once said bonus round has been triggered.

33. The slot machine of Claim 25, wherein the odds of triggering said bonus round are predetermined, and wherein the number of wagered
10 paylines and the wager amount per payline affect the odds of winning said award once said bonus round has been triggered.

34. The slot machine of Claim 33, wherein at least one odds constant
also affects the odds of winning said award once said bonus round has
15 been triggered.

ABSTRACT OF THE DISCLOSURE

The present invention provides a gaming device, wherein the game requires the same average investment from a player to win an award, including a jackpot award, regardless of the amount that the player bets at any one time. The award can be unchanging, e.g., \$10,000, each time a player plays the gaming device. The award can also vary such as with a progressive jackpot, i.e., the jackpot builds until a player "hits" the jackpot. The game enables the average investment necessary to win the jackpot to be uniform by varying the odds of winning the jackpot as the player's bet varies. That is, a player betting less money needs to play the game more times, on average, to win the jackpot. Likewise, a player betting more money needs to play the game less times, on average, to win the jackpot. The average overall bet or investment thus remains constant despite the player's betting habits or betting ability.

FIG.1A

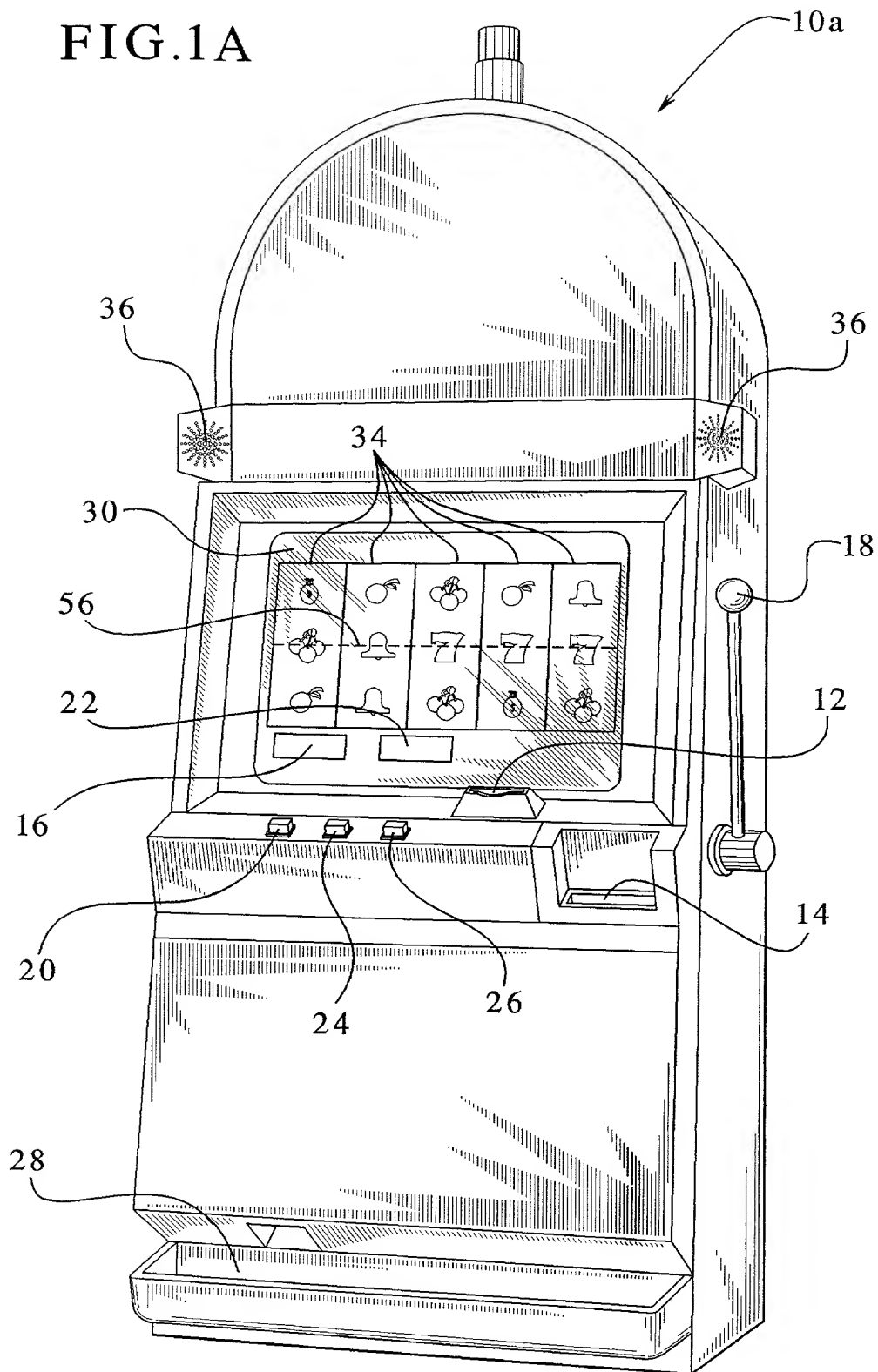


FIG.1B

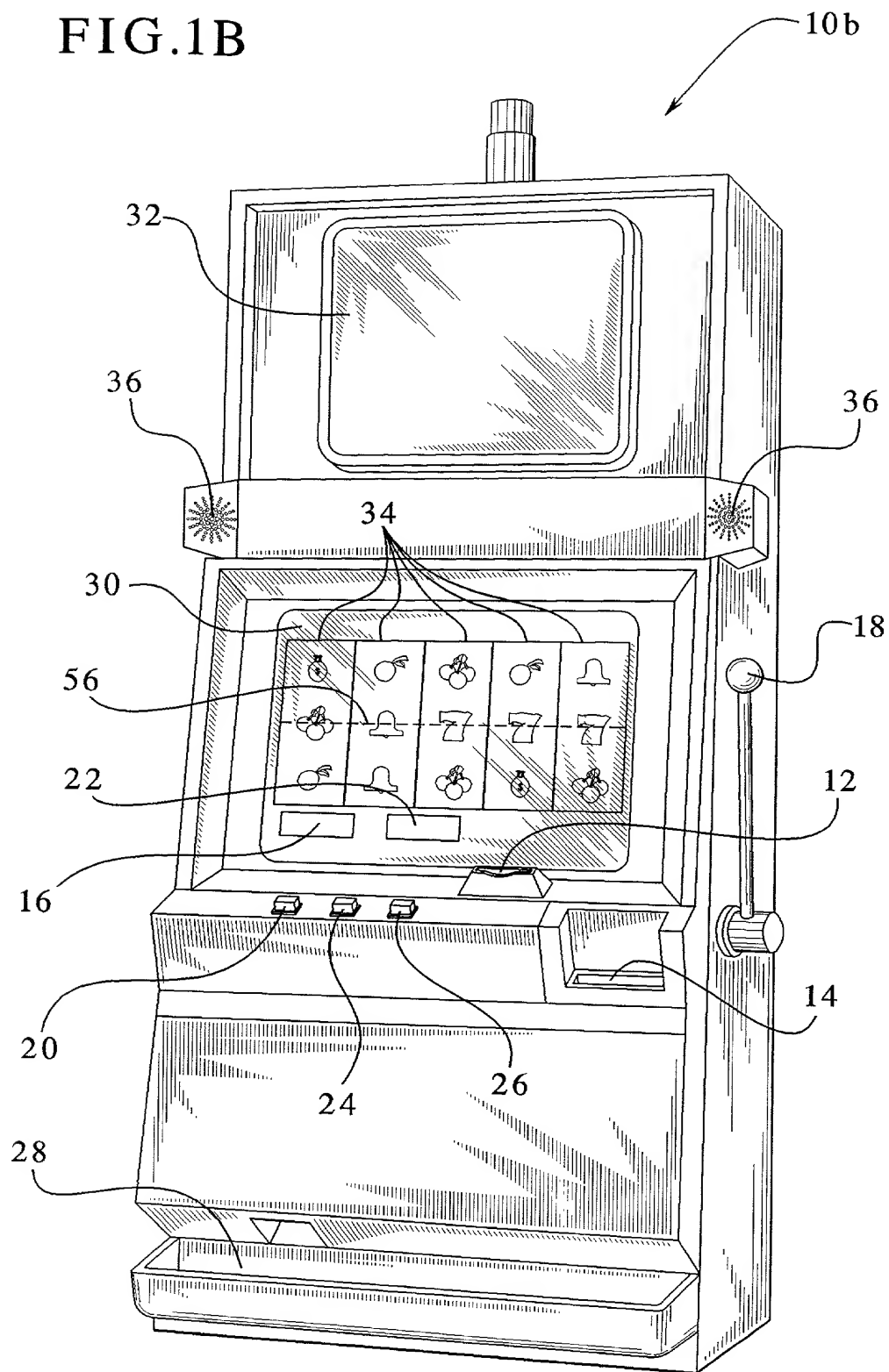


FIG.2

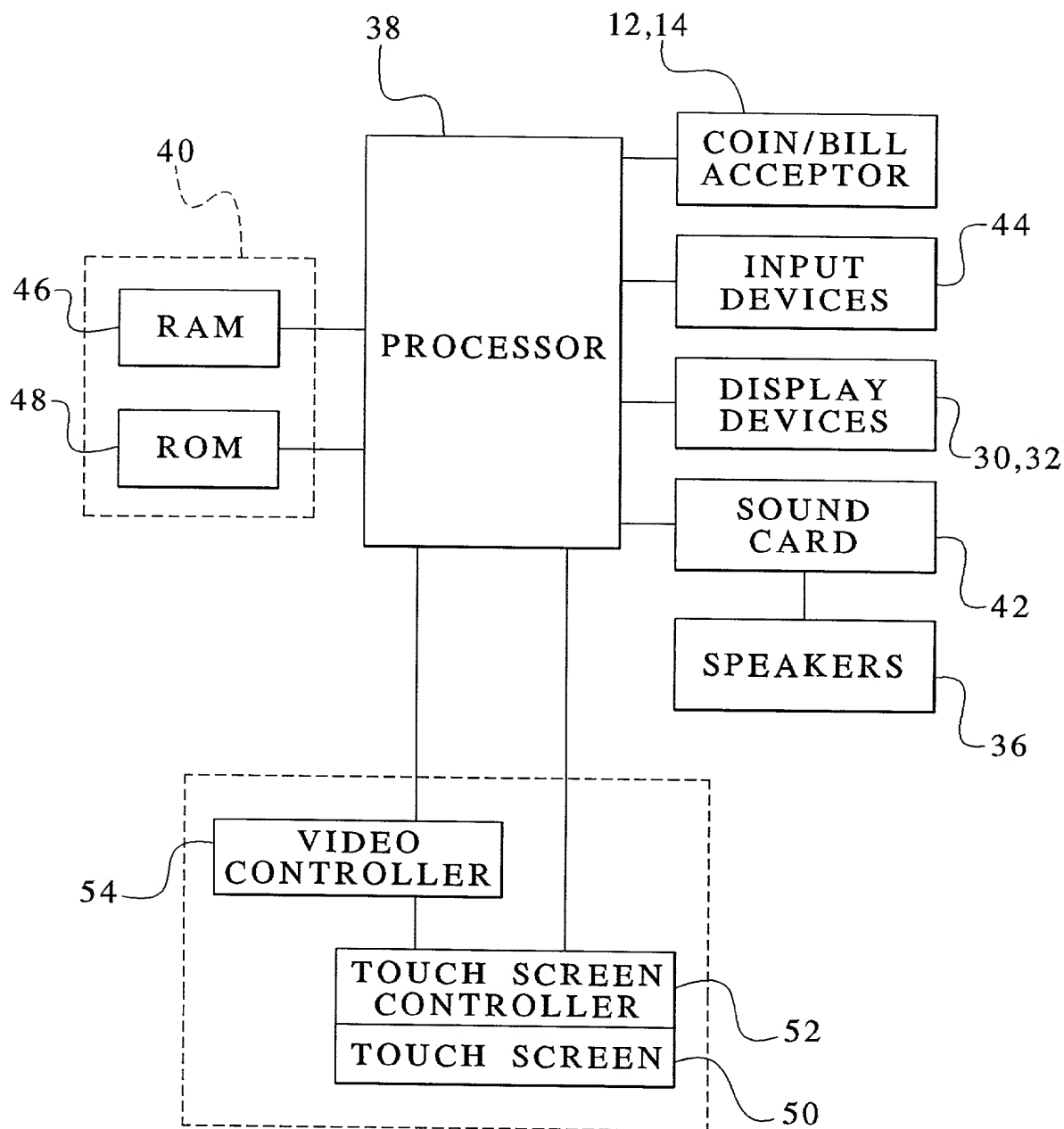
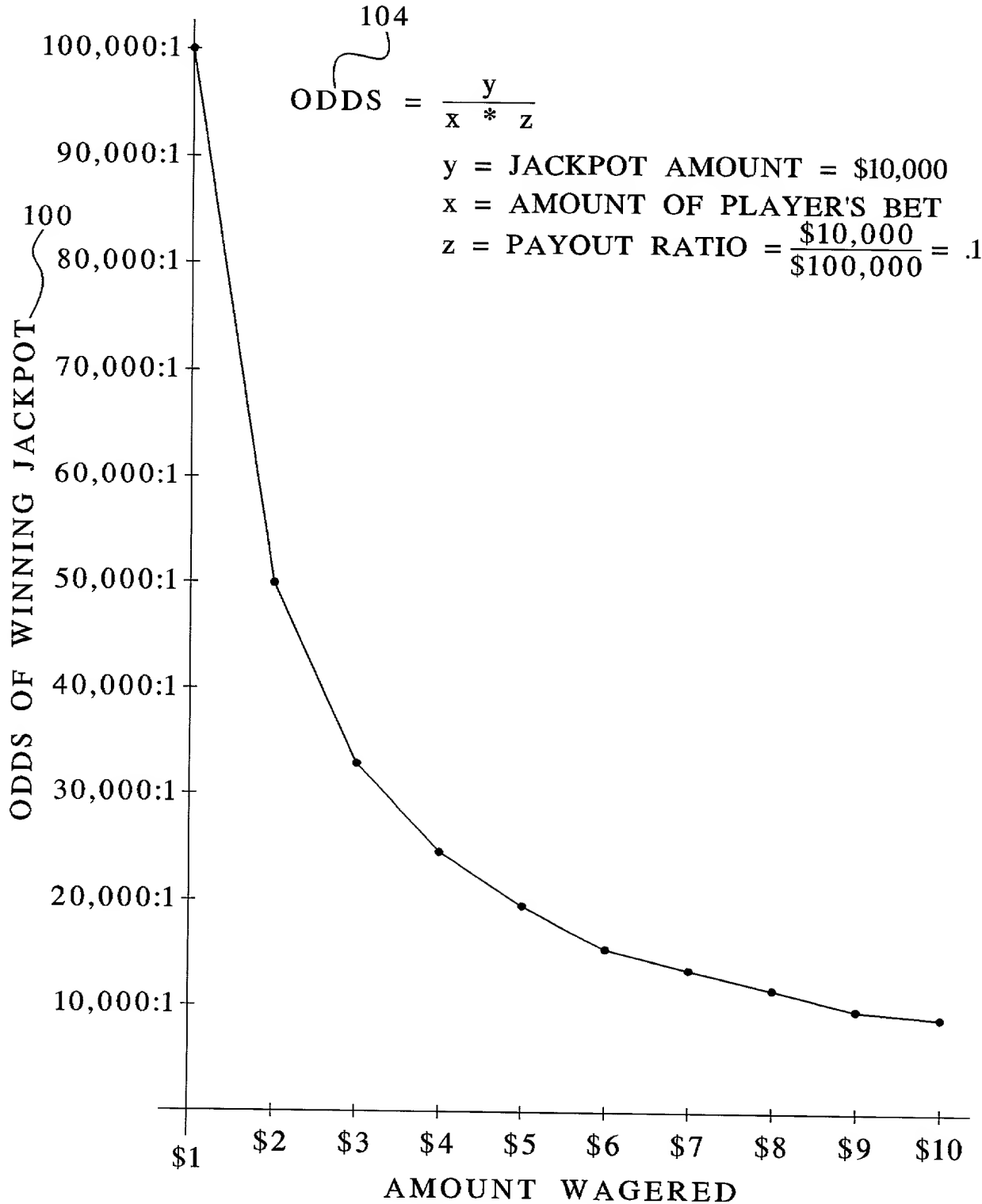
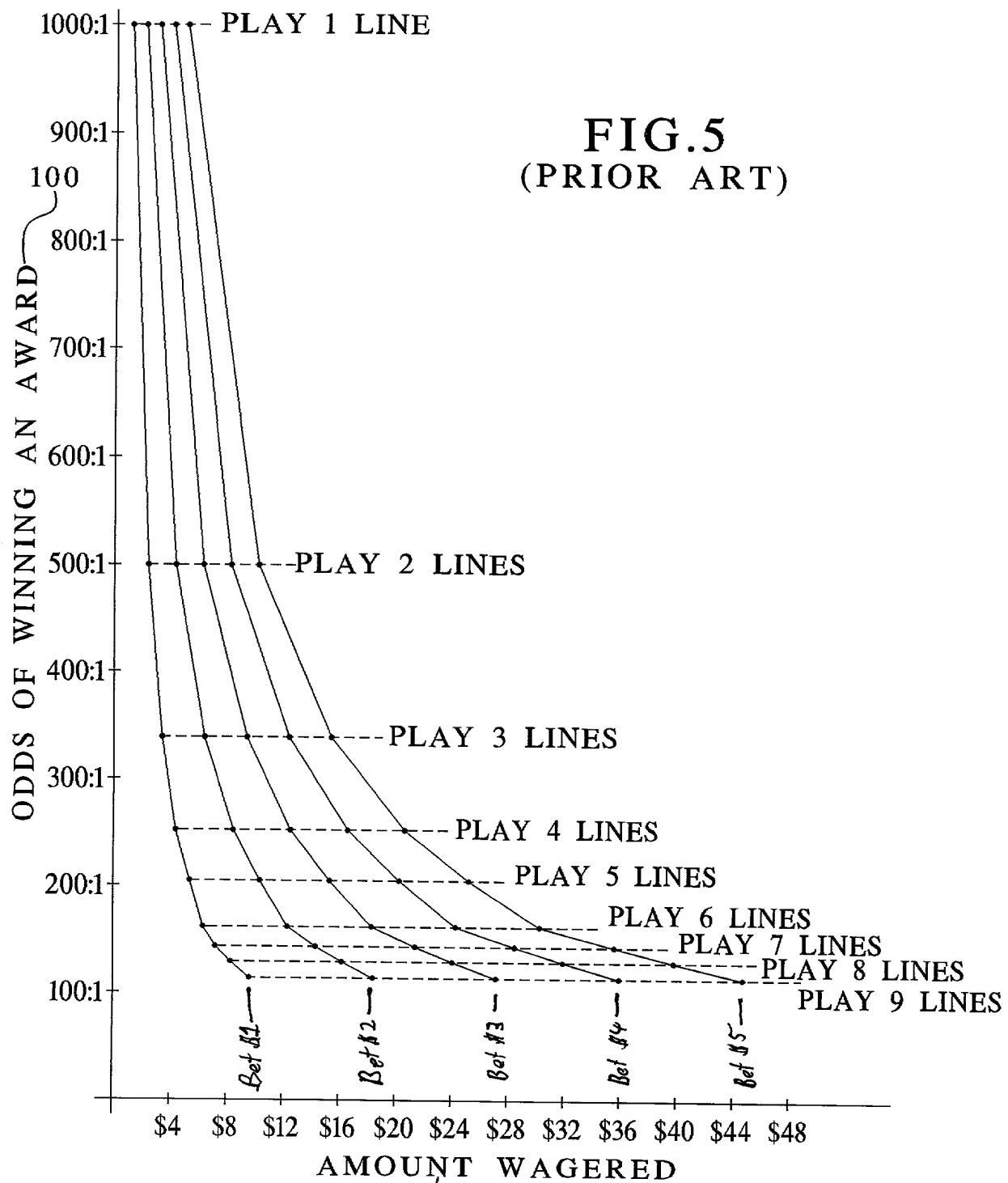


FIG.3

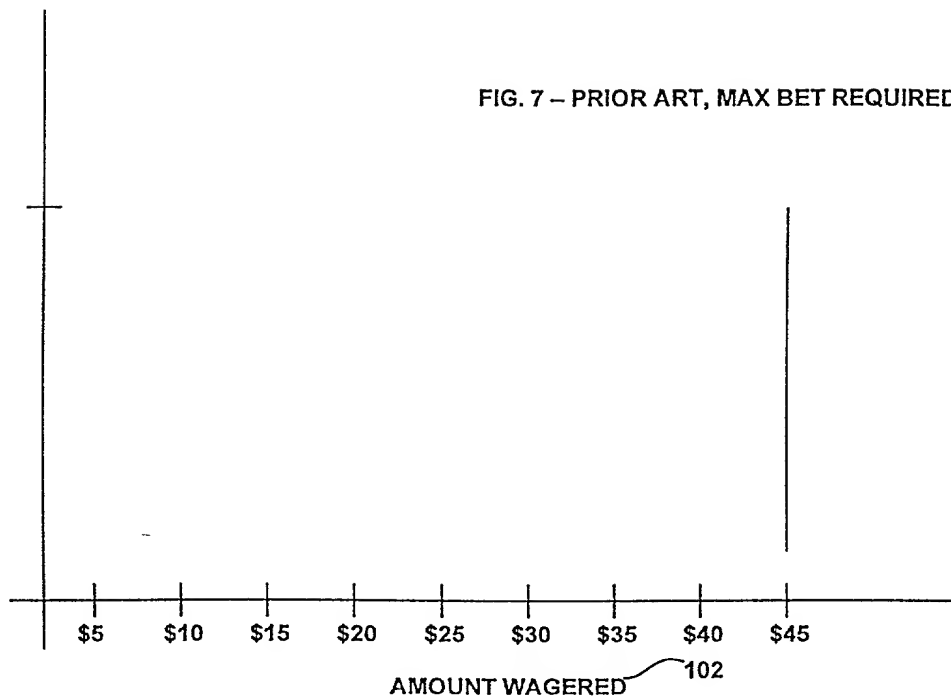


OFFICE OF THE ATTORNEY GENERAL



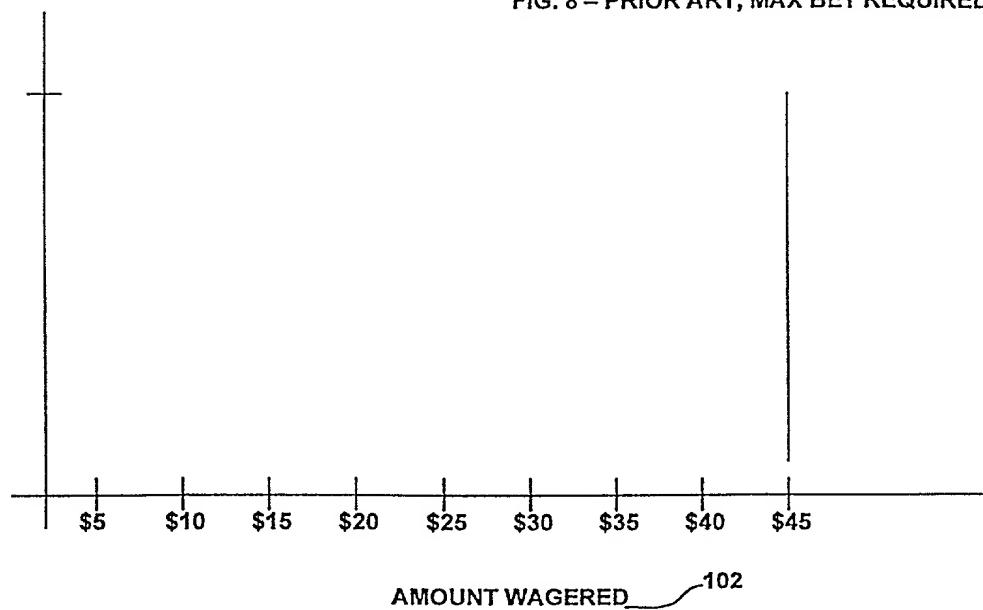
ODDS OF WINNING JACKPOT ~ 100

1000:1



PAYOUT RATIO (r) ~ 106

.1



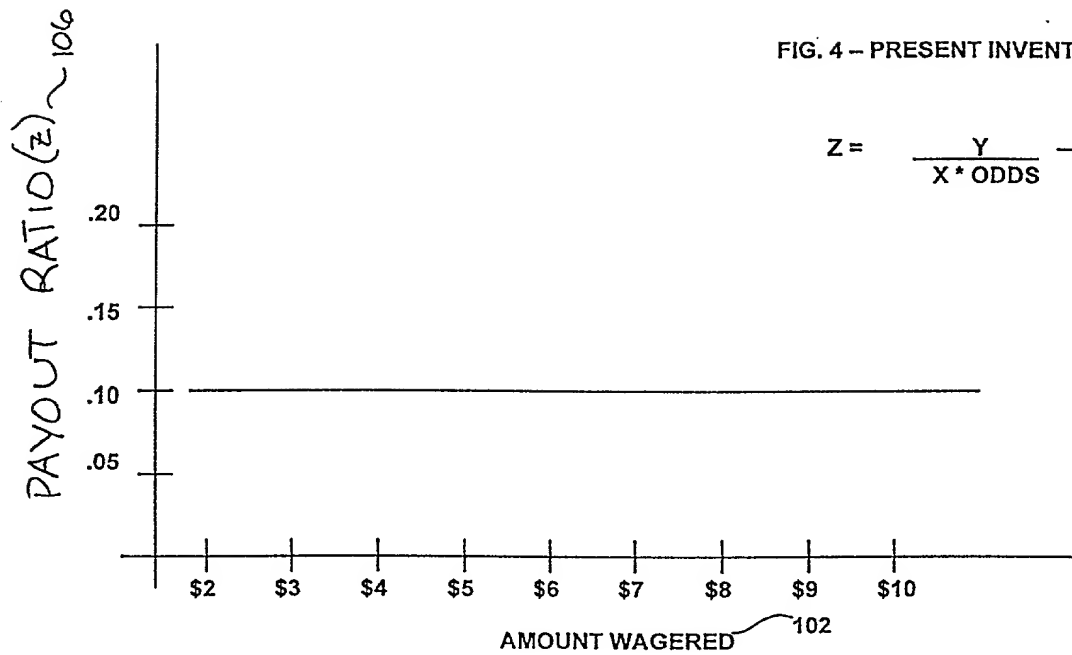


FIG. 4 - PRESENT INVENTION

$$Z = \frac{Y}{X * ODDS} \quad \text{---}^{108}$$

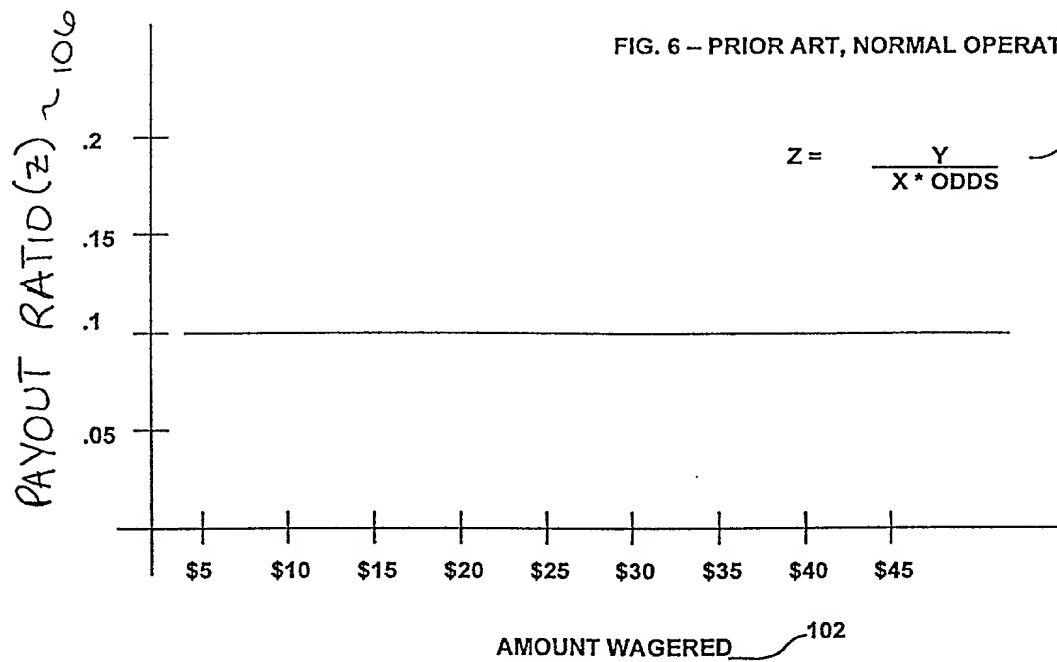
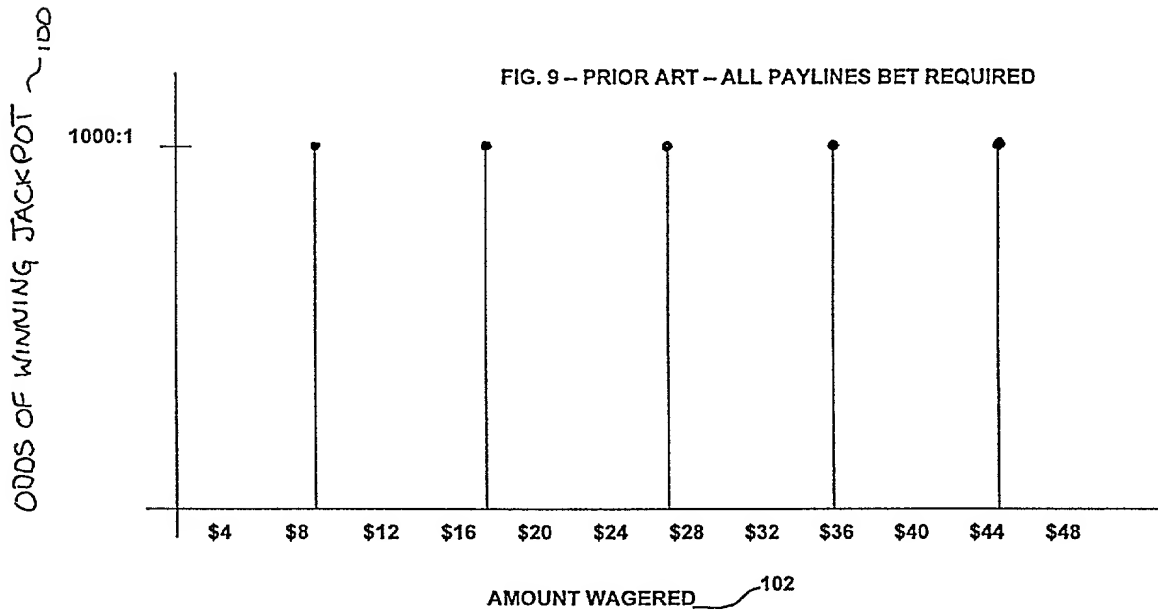
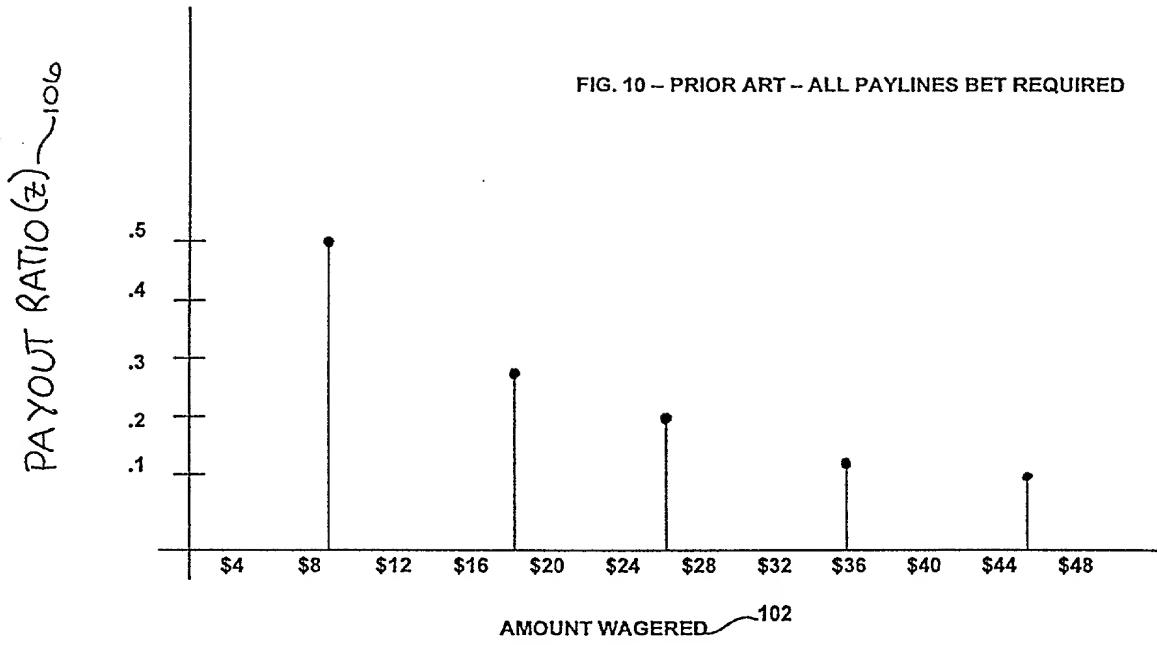


FIG. 6 – PRIOR ART, NORMAL OPERATION

$$Z = \frac{Y}{X * \text{ODDS}} \quad \text{---}^{108}$$



	GAME 1	GAME 2	GAME 3	GAME 4	GAME 5	GAME 6
BASE GAME ODDS	Δ ODDS AS $f(\Delta \text{ BET})$	Δ ODDS AS $f(\Delta \# \text{ PAYLINES})$ X	Δ ODDS AS $f(\Delta \# \text{ PAYLINES})$	Δ ODDS AS $f(\Delta \$ / \text{PAYLINES})$	Δ ODDS AS $f(\Delta \# \text{ PAYLINES})$	ODDS CONSTANT
FIRST BONUS LEVEL ODDS	Δ ODDS AS $f(\Delta \$ / \text{PAYLINES})$	Δ ODDS AS $f(\Delta \$ / \text{PAYLINES})$	X	X	X	X
SECOND BONUS LEVEL ODDS			Δ ODDS AS $f(\Delta \$ / \text{PAYLINES})$	Δ ODDS AS $f(\Delta \# \text{ PAYLINES})$	ODDS CONSTANT	ODDS AS $f(\Delta \# \text{ PAYLINES})$
					X	X
					Δ ODDS AS $f(\Delta \$ / \text{PAYLINES})$	Δ ODDS AS $f(\Delta \$ / \text{PAYLINES})$

FIG. 11

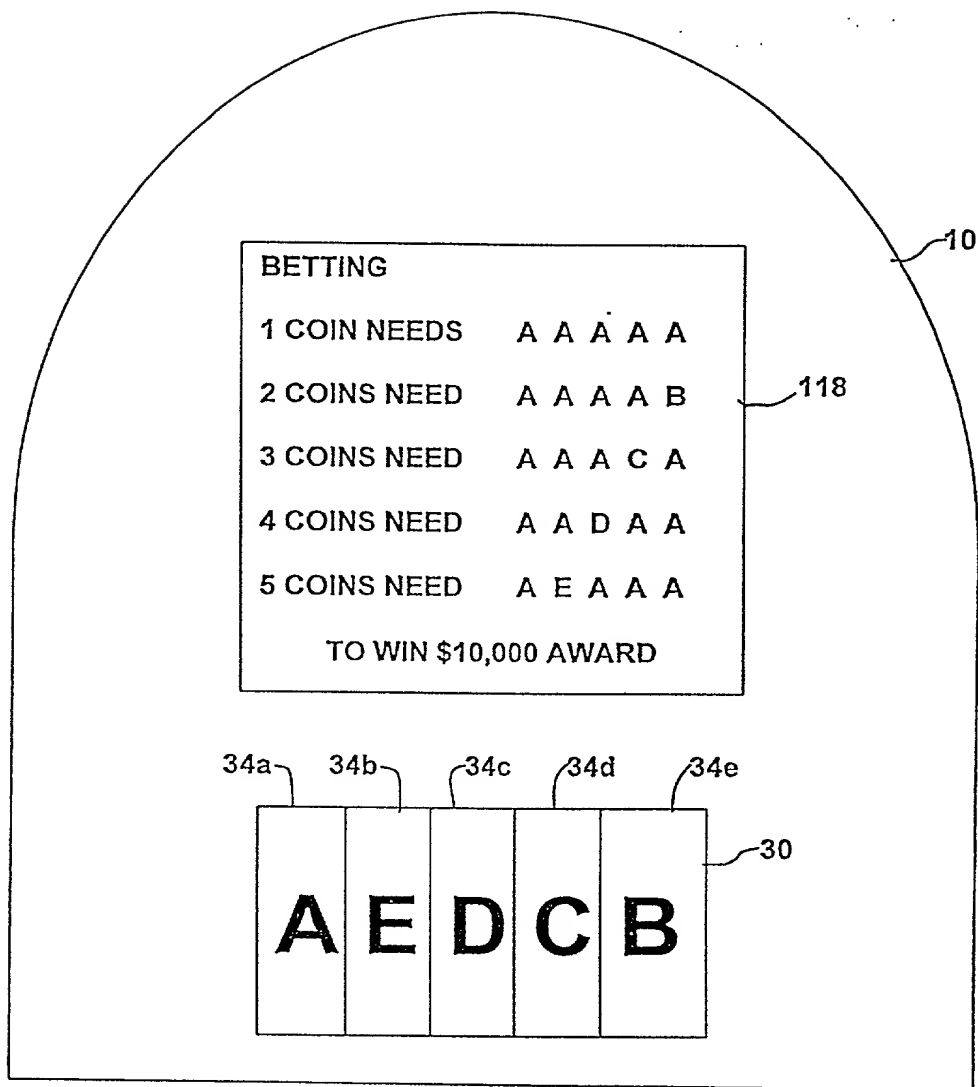


FIG. 12

The diagram illustrates a slot machine interface. At the top, a semi-circular arc represents the machine's back. Below it, a rectangular box labeled "BETTING" contains a table with five rows and two columns. The first column lists the number of coins needed, and the second column lists the corresponding letters. To the right of the betting table is a label "118". Below the betting table is a 5x3 grid of letters. The columns are labeled "34a", "34b", "34c", "34d", and "34e" at the top. The rows are labeled "56b", "56a", and "56c" on the left. The grid contains the following letters:

	34a	34b	34c	34d	34e
56b	I	H	J	L	N
56a	A	E	D	C	B
56c	G	I	K	M	O

To the right of the grid is a label "30".

FIG. 13

BETTING:

ONE COIN NEEDS	A A A A
TWO COINS NEED	A A A B
THREE COINS NEED	A A C A
FOUR COINS NEED	A D A A
FIVE COINS NEED	E A A A

ON BONUS LINE TO ENTER BONUS

IN BONUS:

BETTING ONE LINE GETS YOU 1 SPIN
 BETTING TWO LINES GETS YOU 2 SPINS
 BETTING THREE LINES GETS YOU 3 SPINS

SPIN A AND WIN \$10,000

The wheel of fortune (122) is divided into 12 equal segments. A pointer (124) is positioned at the top-left segment.

The 3x4 grid (128) contains the following symbols:

E	D	C	B
A	G	A	M
Z	A	L	A

Winning combinations are indicated by dashed lines: a horizontal line across the top row (E D C B) and a diagonal line from the bottom-left (Z) to the top-right (B).

FIG. 15

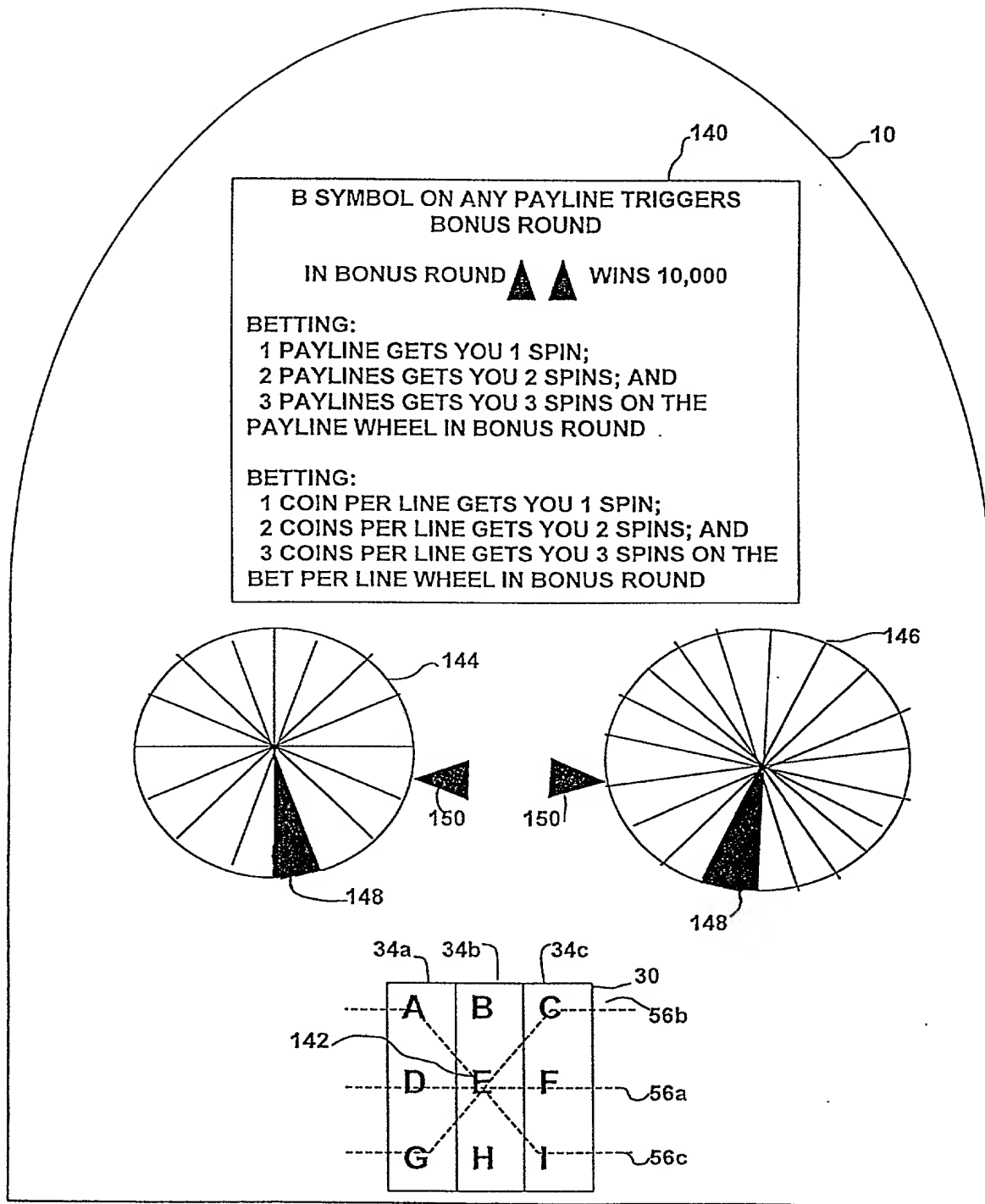


FIG. 18

Docket No.
0112300/483

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

GAMING DEVICE HAVING ODDS OF WINNING WHICH INCREASE AS A PLAYER'S WAGER INCREASES

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____ and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

_____	_____
(Application Serial No.)	(Filing Date)
_____	_____
(Application Serial No.)	(Filing Date)
_____	_____
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

Adam H. Masia (35,602)

Patricia A. Kane (46,446)

Dante J. Picciano (33,543)

Thomas C. Basso (P46,541)

Amy J. Gast (41,773)

Timothy L. Harney (38,174)

Renato L. Smith (45,117)

Alan L. Barry (30,819)

Robert W. Connors (P46,639)

Troy A. Groetken (46,442)

Robert M. Barrett (30,142)

Michael S. Leonard (37,557)

William E. Vaughan (39,056)

Send Correspondence to: Adam H. Masia
Bell, Boyd & Lloyd LLC
P.O. Box 1135
Chicago, IL 60690-1135

Direct Telephone Calls to: *(name and telephone number)*
Adam H. Masia (312) 807-4284

Full name of sole or first inventor Anthony J. Baerlocher	
Sole or first inventor's signature	Date
Residence 3339 Skyline Blvd.	
Citizenship USA	
Post Office Address 3339 Skyline Blvd.	
Reno, NV 89509	

Full name of second inventor, if any	
Second inventor's signature	Date
Residence	
Citizenship	
Post Office Address	